



## Early Journal Content on JSTOR, Free to Anyone in the World

This article is one of nearly 500,000 scholarly works digitized and made freely available to everyone in the world by JSTOR.

Known as the Early Journal Content, this set of works include research articles, news, letters, and other writings published in more than 200 of the oldest leading academic journals. The works date from the mid-seventeenth to the early twentieth centuries.

We encourage people to read and share the Early Journal Content openly and to tell others that this resource exists. People may post this content online or redistribute in any way for non-commercial purposes.

Read more about Early Journal Content at <http://about.jstor.org/participate-jstor/individuals/early-journal-content>.

JSTOR is a digital library of academic journals, books, and primary source objects. JSTOR helps people discover, use, and build upon a wide range of content through a powerful research and teaching platform, and preserves this content for future generations. JSTOR is part of ITHAKA, a not-for-profit organization that also includes Ithaka S+R and Portico. For more information about JSTOR, please contact [support@jstor.org](mailto:support@jstor.org).

# Eastman Organic Chemicals

MADE IN U. S. A.

The spirit of research must not be hampered by delay in obtaining chemicals, nor by the uncertainty as to their purity.

Eastman quality and service are unsurpassed. Actual determinations of purity have been made in our Laboratories for the majority of our chemicals. The results are given in our new list.

Small and large orders receive the same prompt attention.

Directions for the use of any of our reagents or indicators will be sent upon request.

*Send for the most complete list of fine organic chemicals in America.*

Eastman Kodak Company  
Research Laboratory                      Rochester, N. Y.

The **American Journal of Botany** is unsurpassed as an advertising medium for publications, laboratory equipment, and other items of interest to botanists and general biologists.

Some concerns have advertised with us continuously since the journal was established over eight years ago. Evidently they consider it a good business proposition.

Rate sheet on request.

# ANNALS OF BOTANY

*Edited by*

DUKINFIELD HENRY SCOTT, M.A., LL.D., D.Sc., F.R.S.  
*Lately Honorary Keeper of the Jodrell Laboratory, Royal Botanic Garden, Kew*

JOHN BRETLAND FARMER, D.Sc., M.A., F.R.S.  
*Professor of Botany, Imperial College of Science and Technology, London*

FRANCIS WALL OLIVER, M.A., D.Sc., F.R.S.  
*Quain Professor of Botany, University College, London*

*and*

ROLAND THAXTER, M.A., Ph.D.  
*Professor of Cryptogamic Botany in Harvard University, Cambridge, Mass., U.S.A.*

ASSISTED BY OTHER BOTANISTS

---

## CONTENTS, JANUARY 1922

- The Moisture Relations of Terrestrial Algae. I. Some General Observations and Experiments. By F. E. FRITSCH.
- Anatomical Structure of the Roots of Barley. By VIOLET G. JACKSON.
- Some Observations on Isoetes Drummondii A. Br. By T. G. B. OSBORN.
- Observations in Malaya on Bud-rot of Coco-nuts. By A. SHARPLES and J. LAMBOURNE. With Plates I-VII.
- On the Fossil Genus Sporocarpon. By R. C. MCLEAN. With Plates VIII-X.
- Some Experiments on Action of Wood on Photographic Plates. By HELEN STUART WILLIAMSON. With Plate XI.
- Studies in the Physiology of Parasitism. VIII. On the Exosmosis of Nutrient Substances from the Host Tissue into the Infection Drop. By WILLIAM BROWN.
- The Flowering Curve of the Egyptian Cotton-plant. By JAMES ARTHUR PRESCOTT.
- Note: Abnormal Flowers in Eranthis. By W. B. TURRILL.

---

## NOTICE TO SUBSCRIBERS

### *Change of Price*

As from January, 1921 (Vol. XXXV, No. 137), the subscription price for four numbers is 40s. (foreign postage 1s. 6d. extra), or 45s. for the volume bound in cloth. Cloth cases may be obtained, price 5s.

The price of future single volumes (bound in *cloth*) will be 65s. net, and of single parts 15s. net. The prices of existing volumes and parts are now *net*, and volumes will be supplied in cloth bindings when existing stocks (with morocco back) are exhausted. But subscribers who wish to continue the present binding are asked to communicate with MR. MILFORD.

---

HUMPHREY MILFORD,  
**Oxford University Press**

**Amen Corner,**

**London, E. C. 4**

# Professional Advancement Service

---

THE PROFESSIONAL ADVANCEMENT SERVICE seeks to aid men and women in botany and related subjects in securing such positions as they may desire, and to offer to heads of departments, or directors of laboratories, experiment stations, or other institutions an opportunity of making known the vacancies they seek to fill.

THE METHOD OF THE SERVICE consists in publishing in the American Journal of Botany a brief notice stating the training and experience of the applicant or the requirements of the vacancy. Each person using the Service is designated by number and his identity may be learned on application to the Business Manager of the American Journal of Botany. A list of eligibles and open positions is kept, and inquiries are referred to the advertisers who are mentioned or seem best suited to the requirements stated. The Professional Advancement Service may thus have the opportunity to mention a man for a desirable position or a promotion a number of times during a period of several months. The charge for the service is \$2.00 for each case for one year or less. The notice regarding qualifications offered or desired will be published at frequent intervals, but not more than ten times.

Address: The Business Manager, American Journal of Botany, Brooklyn Botanic Garden, Brooklyn, N. Y.

---

**No. 41.** Professor of Botany (Ph.D., 1909) with fourteen years teaching experience, nine in the present location, wishes a change of position. Special interest in Physiology and Pathology. Teaching with ample time for research, or full time research in fungous nutrition especially desired.

---

**No. 43.** Botanist, possessing B.A. and M.A. degrees from a leading university, desires position in Eastern college, university, or collegiate institute. Is interested chiefly in Morphology, Systematic Botany, and Ecology. Has eleven years' experience in college teaching and has published several books and papers on botanical subjects.

---

**No. 44.** Botanist, B.S. and M.S. from a university, desires college or university position in botany after June 10, 1922. Specially interested in ecology and taxonomy. Four years' teaching experience in college, including one year in a state university as acting assistant professor of botany. Member Botanical Society of America and Ecological Society of America.

---

**No. 45.** Botanist, Ph.D., with thirteen years' experience in teaching and administrative activities, desires a change of position offering opportunity for both teaching and research, and financial betterment. Has taught morphology, dendrology, physiology, mycology and plant pathology; good technician; especially interested in dendrology and physiology, with several publications in these fields; can handle large classes.

---

**No. 47.** Graduate, University of Amsterdam and Agricultural College. Broad training and experience in plant breeding, plant physiology, genetics, economic and general botany. Eastern and western American teaching experience as Professor. Studied several years extensively in various institutions in England, France, Germany, Holland, Sweden, Norway, Denmark, Switzerland, Belgium and Italy. Formerly Scientific Director of private Plant Breeding Station. High class recommendations. Desires position in University or *private* enterprise.

---

**No. 48.** Botanist, Ph.D. of five years' standing, with experience in research and teaching, wishes to improve condition. Member technical and honorary societies. Fellow A.A.A.S. Especially interested in physiology and pathology. Several publications. Would like research position or teaching position with sufficient time for research. North central section of the country preferred.

# BROOKLYN BOTANIC GARDEN MEMOIRS

## VOLUME I—DEDICATION PAPERS

CONTAINING 33 CONTRIBUTIONS; PAGES 1-521; PLATES 1-28;  
TEXT FIGURES 41

TABLE OF CONTENTS WILL BE MAILED ON REQUEST

The papers contained in this volume were presented April 20-21, 1917, either in person or by title, at the Scientific Program, which formed part of the Dedication Exercises on the occasion of the completion of the Laboratory Building and Plant Houses of the Brooklyn Botanic Garden.

PUBLISHED JULY 6, 1918

Price, \$3.50 plus postage. Weight, 4 lbs. Remittance should accompany all orders.  
Not offered in exchange

ADDRESS:

THE SECRETARY, BROOKLYN BOTANIC GARDEN  
978 WASHINGTON AVE. BROOKLYN, N. Y.

## Clarke Memoir Paper

A Permanent Record Paper with Half Tone  
and Color Printing Qualities

---

CLARKE & COMPANY

711 Brunswick Building

225 Fifth Avenue

NEW YORK

Always mention the JOURNAL OF BOTANY when answering our advertisements.

# **THE NEW ERA PRINTING COMPANY**

**LANCASTER, PA.**

Is prepared to execute in first-class and satisfactory manner all kinds of Printing, Electrotyping and Binding. Particular attention given to the work of Schools, Colleges, Universities and Public Institutions

**Books, Periodicals**

**Technical and Scientific Publications**

**Monographs, Theses, Catalogues**

**Announcements, Reports, etc.**

**All Kinds of Commercial Work**

Publishers will find our product ranking with the best in workmanship and material, at satisfactory prices. Correspondence solicited. Estimates furnished.

**THE NEW ERA PRINTING COMPANY**

---

# **NATIONAL PHOTO-ENGRAVING Co.**

## **46-48 NEW CHAMBERS STREET**

## **NEW YORK CITY**

Telephone; BEEKMAN 3179

PRODUCERS OF HIGH-CLASS ENGRAVINGS  
HALF - TONES, LINE PLATES, COLOR WORK, Etc.

*Plate-makers to*

**AMERICAN  
JOURNAL OF BOTANY**

Always mention the JOURNAL OF BOTANY when answering our advertisements.

---

## A New Pharmacognosy

In which the marked changes in the geographical sources of drugs—brought about by the war—have been fully presented. Valuable modern data has been acquired from first-hand sources, upon the cultivation of medicinal plants. Such as can be successfully grown in the United States are fully discussed.

## Youngken's Pharmacognosy

210 Illustrations (350 Figures), Cloth \$6.00

By Heber W. Youngken, Ph.M., Ph.D., Professor of Botany and Pharmacognosy, Philadelphia College of Pharmacy and Science, Director of the Botanical Garden.

**P. Blakiston's Son & Co., Publishers**  
1012 Walnut Street, Philadelphia

---

## WHELDON & WESLEY, Ltd.

THE SCIENTIFIC AND NATURAL HISTORY BOOKSELLERS,

Have in stock nearly all requirements in books, pamphlets, and periodicals relating to Chemistry, Agriculture, Gardening, Forestry, Botany (Systematic, Economic, and Geographical), Zoology, (including Ornithology, of which the stock is probably the largest in the world, Systematic and Economic Entomology, works on Mammalia, Reptilia, Fish and Fisheries, Mollusca, Invertebrata, etc.), Microscopy, Geology, Palaeontology, Mineralogy, Mining, Metallurgy, etc., both new and second-hand.

Catalogues of any subject, price 2d. each. Any book quoted on application, and those not in stock sought for without charge.

We beg to draw attention to the fact that we hold the largest stock in the country of

### JOURNALS AND TRANSACTIONS OF SCIENTIFIC SOCIETIES,

Including Transactions and Proceedings, etc., of the Royal Society, Linnean Society and Zoological Society of London, Journals of the Chemical, Chemical Industry, Geological, Geographical, Royal Microscopical, Royal Agricultural, Horticultural, Astronomical, Physical, and other Societies, Proceedings of numerous local Natural History Societies, also Nature, Ibis, Zoologist, Curtis's Botanical Magazine, Journal of Botany, and numerous other Periodicals, British and Foreign.

Sets, runs, odd vols., and numbers quoted for on application.

Subscriptions taken for all Scientific and other Journals, which will be posted regularly on issue.

Libraries and parcels of Natural History and Scientific Books purchased.

38, GREAT QUEEN STREET, KINGSWAY, LONDON, W.C. 2.

Telephone: GERRARD 1412,

AND 28, ESSEX STREET, STRAND, W.C. 2.

(Telephone: CITY 2322).

BOOKBINDING UNDERTAKEN BY EXPERIENCED WORKMEN.

Always mention the JOURNAL OF BOTANY when answering our advertisements.

# BOTANICAL SOCIETY OF AMERICA

Reorganized 1906, uniting the Botanical Society of America (1893), the Society for Plant Morphology and Physiology (1896), and the American Mycological Society (1903).

## OFFICERS FOR 1922

**President:** HENRY C. COWLES

*University of Chicago*

**Vice-President:** MARGARET C. FERGUSON

*Wellesley College*

**Secretary:** I. F. LEWIS

*University of Virginia, University, Va.*

**Treasurer:** IRVING W. BAILEY

*Bussey Institution, Harvard University*

**Councilors:**

N. L. BRITTON

*New York Botanical Garden*

J. C. ARTHUR

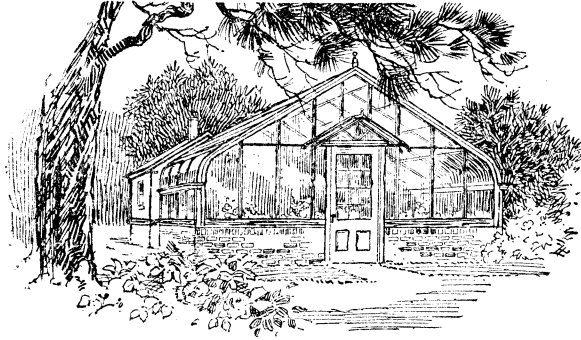
*Purdue University*

C. E. ALLEN

*University of Wisconsin*

Any one actively interested in botanical work is eligible for membership. Candidates for membership must be recommended by three members, not members of the Council, on blanks to be obtained from the Secretary.

The annual dues are \$5.00, including one subscription to the AMERICAN JOURNAL OF BOTANY. Candidates proposed for membership, and approved by the Council, may receive one copy of the JOURNAL at \$4.00 per year pending their election at the winter meeting of the Society.



## Do Our Greenhouses Really Differ So Much From Others

Outwardly most folks are mostly alike.

So are most greenhouses.

But inwardly—that's quite a different matter.

Just as the way a man gives attention to the little things—tells you the kind of a man he is; just so the care and particularity given to the little details in a greenhouse, tells you the kind of a house it is.

Some owners have accused us of being rather fussy about our work, intimating that we could cut corners and get the work done quicker.

And they are right.

But you'll agree that we are also right in refusing to do it.

That then might be one of the differences in which our greenhouses differ.

# Hitchings and Company



Home Office and Factory: ELIZABETH, N. J.

NEW YORK  
101 Park Ave.

BOSTON-9  
294 Washington St.

PHILADELPHIA  
133 So. 12th St.